Chapter I

Introduction, Overview Of Specific Programs

1. **INTRODUCTION.** Public transportation systems are an increasingly important element in the Nation's overall transportation system. Public transit increases basic mobility for millions of Americans, provides congestion relief and promotes safe travel. Whether transit is used out of necessity or by choice, it continues to offer an effective alternative that links the traveling public to their jobs, schools, services and recreation.

   The Federal Transit Administration (FTA) is the principal source of Federal financial assistance to America's communities for the planning, development and improvement of public transportation systems. FTA provides leadership, technical assistance, and financial resources for safe, technologically advanced public transportation to enhance mobility and accessibility, to improve the Nation's communities and natural environment and to strengthen the national economy.

   FTA takes a leadership role in coordinating transit research and technology activities for public transit agencies and the private sector, promoting global competitiveness, facilitating international information exchange and mainstreaming innovation.

   In support of FTA's mission, the FTA Office of Research, Demonstration and Innovation partners with the transportation industry to accomplish deployment of technological innovations to improve personal mobility, minimize fuel consumption and air pollution, increase ridership and enhance the quality of life in all communities.

   FTA follows a comprehensive Research and Technology Business Plan, developed in consultation with the transit industry, as a roadmap for implementing Departmental and agency strategic plans. The specific program areas included in this plan include: safety and security, equipment and infrastructure, fleet operations, policy and planning, and professional capacity building. The Research and Technology Business Plan also supports the goals and objectives of the Government Performance and Results Act of 1996, which requires each Federal agency to develop strategic goals, plans, and performance measures with participation and feedback from external customers.

   In mainstreaming the FTA Research and Technology Program, FTA requires all recipients of funds for research and technology projects to develop and follow an implementation plan consistent with the direction and guidance in this circular. Readers are encouraged to refer to the most current FTA Strategic Plan and the Transit Research and Technology Business Plan to learn more about FTA's current Research and Technology Program activities.

2. LEGISLATIVE AUTHORITY. Statutory authority for FTA's Office of Research and Technology activities is as follows:

a. Authorizing Legislation. Enacted by Congress, authorizing legislation establishes or continues the legal operation of a Federal program or agency. FTA's most recent authorizing legislation is the Transportation Equity Act for the 21st Century ("TEA-21") Public Law 105-178, enacted June 9, 1998, as amended by the TEA-21 Restoration Act, Pub. L. 105-206, July 22, 1998.

b. Codification of Federal Transit Laws. The bulk of FTA's enabling legislation is codified at 49 U.S.C. Chapter 53. The following sections of 49 U.S.C. Chapter 53 authorize projects within the National Research and Technology Program: Sections 5312, 5313(a), 5314, 5315, 5318, and 5309(a)(1)(D). Intelligent Transportation Systems (ITS) projects, administered through the National Research and Technology Program, are authorized by TEA-21, Sections 5201 *et seq.,* 23 U.S.C. Section 502 note.

3. CATALOG OF FEDERAL DOMESTIC ASSISTANCE. The Catalog of Federal Domestic Assistance (CFDA) is a government-wide compendium of Federal programs, projects, services, and other activities that provide assistance or benefits to the American public. It contains financial and non-financial assistance programs administered by Departments and establishments of the Federal government. Its purpose is to assist users in identifying programs that meet specific objectives of the potential applicant, and to obtain general information on Federal assistance programs. In addition, the CFDA facilitates coordination and communication between the Federal government and State and local governments. A CFDA number is required on Federal Form SF-424 when an applicant applies for FTA funds. For additional information visit: http://www.cfda.gov.

FUNDING SOURCES

The following table summarizes the funding source according to program area.

Program Title	*Statutory Citation - - 49 U.S.C.*	*CFDA*
Capital Investment Grants & Loans for the Introduction of New Technology	Section 5309(a)(1)(D)	20.500
Research, Development, Demonstration and Training Projects	Section 5312(a)	20.512
Innovative Techniques and Methods	Section 5312(c)(2)	20.512
Joint Partnership Program for Deployment of Innovation	Section 5312(d)	20.512
International Mass Transportation Program	Section 5312(e)	20.512
Transit Cooperative Research Program	5313(a)(2)	20.514
Transit Research and Technology Programs - National Planning and Research Program	Section 5314(a)	20.514
National Transit Institute	Section 5315(d)	N/A
Bus Testing Program	Section 5318	20.507
University Transportation Centers Program	Section 5505	20.701
Intelligent Transportation Systems (ITS)	Transportation Equity Act for the 21st Century Section 3012	N/A

TABLE I-1

4. CATEGORIES OF FUNDING/PROGRAMS. The FTA Transit Research and Technology Program encompasses the following programs:

a. The National Planning & Research Program (also known as the National Research and Technology Program).

Authorizing Legislation. 49 U.S.C Section 5314(a)

Appropriations. "Transit Planning and Research" Account of the Annual Department of Transportation Appropriations Act

Program Objective. This program includes several types of projects, including research, development, demonstration and training projects, 49 U.S.C. Section 5312, planning studies, 49 U.S.C. Section 5303(g); and human resource programs, 49 U.S.C. Section 5322. The objective of 49 U.S.C. Section 5314 is to provide technical assistance, demonstration programs, research, public and private education, mass transportation technology development, and special demonstration initiatives.

Description. The National Research and Technology Program addresses problems that are national in scope. It includes the development of innovative transit technologies such as bus rapid transit, vehicle and systems technology, advanced rail transit control and communication systems, advanced technology buses, *etc.* It also

includes FTA's safety and security projects, fundamental data collection and analysis of transit industry performance, policy studies, transportation planning techniques, and development of policies designed to further transit-oriented land-use. Other emphasis areas are: system safety and personal security, lower-cost and environmentally-friendly vehicles, labor-management relations, customer service quality, equitable access, innovations in planning and infrastructure development, professional development, and new paradigms in mobility management.

Purposes. FTA's Research and Technology Program serves multiple purposes:

To foster innovation in public transit systems, through local demonstrations of promising, but risky, new technologies and service or operational concepts to provide information that can be used nationally, wherever sound decisions are needed on how best to improve service or reduce costs. The National Program emphasizes advanced technology applications that complement private sector Research and Development, enhancing the vitality, competitiveness and responsiveness of America's industrial base so that it can better serve domestic needs and foster export markets.

To address economic and social issues resulting from human impacts on the environment, and develop risk assessment methodologies, and other analytical tools for effective policy formulation. The program provides funds for assessing and improving local transportation conditions through innovative planning tools, assessing the condition of the transit industry, and providing technical support in safety, security, and drug and alcohol control.

To develop practical know-how for solving fundamental industry-wide problems, such as how to accommodate the travel needs of persons with disabilities, how to finance transit infrastructure construction and maintenance, and how to meet requirements of the Clean Air Act, and its amendments.

To support development of information and technical assistance to convey results of research, technology development and innovative demonstrations for adaptation and local implementation.

Cost Sharing/Local Match. None required unless there are substantial benefits to the recipient.

CFDA Code. 20.514

b. Research Development, Demonstration and Training Programs are Funded Under Transit Planning and Research.

Authorizing Legislation. 49 U.S.C Section 5312(a)

Appropriations. "Transit Planning and Research" Account of the Annual Department of Transportation Appropriations Act.

Program Objective. To provide technical assistance, demonstration programs, research, public and private education, mass transportation technology development, and special demonstration initiatives. Projects funded must serve one of the following purposes:

(1) To improve mass transportation service;

(2) To contribute toward meeting total urban transportation needs at a minimum cost; or

(3) To assist in the reduction of urban transportation needs by improving the ability of transit industry operating officials to plan, manage, and operate their systems more effectively and safely.

Description. FTA funds projects that develop, test, and demonstrate innovative technologies, service concepts, techniques, and analytical tools for planning, operating and managing transit enterprises and improving customer service. FTA also funds projects that provide technical assistance in safety, security, and drug and alcohol control, as well as practical know-how for solving fundamental industry-wide problems, such as how to accommodate the travel needs of persons with disabilities, how to finance transit infrastructure construction and maintenance, how to meet requirements of the Clean Air Act and related implementing legislation, *etc.*

c. Research, Development and Demonstration Projects. The Secretary of Transportation may undertake or make grants or contracts (including agreements with Departments, agencies, and instrumentalities of the United States Government) for research, development, and demonstration projects related to urban mass transportation that the Secretary decides will help reduce urban transportation needs, improve mass transportation service, or help mass transportation service meet the total urban transportation needs at a minimum cost.

Eligible Recipients. State and local government agencies, public and private transit agencies, universities, non-profit organizations, consultants, legally constituted public agencies, operators of public transportation services, and private for-profit organizations.

d. Research, Investigations and Training.

Authorizing Legislation. 49 U.S.C Section 5312(b)

(1) The Secretary of Transportation may make grants to nonprofit institutions of higher learning:

(a) To conduct competent research and investigations into the theoretical or practical problems of urban transportation; and

(b) To train individuals to conduct further research or obtain employment in an organization that plans, builds, operates or manages an urban transportation system.

(2) Research and investigations under this subsection include:

(a) The design and use of urban mass transportation systems and urban roads and highways;

(b) The interrelationship between various modes of urban and interurban transportation;

(c) The role of transportation planning in overall urban planning;

(d) Public preferences in transportation;

(e) The economic allocation of transportation resources;

(f) The legal, financial, engineering, and esthetic aspects of urban transportation; and

(g) In making a grant under this subsection, the Secretary shall give preference to an institution that brings together knowledge and expertise in the various social sciences and technical disciplines related to urban transportation problems.

Eligible Recipients. Nonprofit institutions of higher learning, both public and private.

e. Training Fellowships and Innovative Techniques and Methods.

Authorizing Legislation. 49 U.S.C Section 5312(c)

(1) The Secretary of Transportation may make grants to States, local governmental authorities, and operators of mass transportation systems to provide fellowships to train personnel employed in managerial, technical, and professional positions in the mass transportation field. (NOTE: Because training programs are generally financed under 49 U.S.C. Section 5315, which authorizes the National Transit Institute, FTA rarely utilizes this authority to support training programs.)

(2) The Secretary of Transportation may make grants to State and local governmental authorities for projects that will use innovative techniques and methods in managing and providing mass transportation.

(3) A fellowship under this subsection may be for not more than one year of training in an institution that offers a program applicable to the mass transportation industry. The recipient of the grant shall select an individual on

the basis of demonstrated ability and for the contribution the individual reasonably can be expected to make to an efficient mass transportation operation. A grant for a fellowship may not be more than the lesser of $24,000 or 75 percent of:

(a) Tuition and other charges to the fellowship recipient;

(b) Additional costs incurred by the training institution and billed to the grant; and/or

(c) The regular salary of the fellowship recipient for the period of the fellowship to the extent the salary is actually paid or reimbursed by the recipient.

Eligible Recipients. State and local government agencies, public and private transit agencies.

Cost Sharing/Local Match. Section 5312(c)(3) requires a local share of at least 25% of the total project cost.

CFDA Code. 20.512

f. Joint Partnership Program for Deployment of Innovation.

Authorizing Legislation. 49 U.S.C Section 5312(d)

Program Objective. Technology and innovation are at the heart of advancing our transportation systems. Public transport systems are in constant need of improvement and modernization in order to meet the increasingly complex needs of the transit riding public. Federal research and development support plays a critical role in the development and deployment of promising, but oftentimes risky, innovation that supports this improvement and modernization. In the past, efforts to introduce new technology have often been burdened by questions of ownership, the role of the government in projects financed solely through Federal funding, and the ultimate commercialization of the resulting innovation throughout the transit industry.

Description. The Joint Partnership Program for the Deployment of Innovation (JPP) is a new approach to the deployment of promising transit technology. Through the JPP, FTA is seeking more attractive partnership arrangements for government, transit operators and equipment suppliers. The JPP is implemented through selection of innovation projects identified by industry as needed, and requires a minimum 50% cost share match from non-Federal sources. The JPP allows technology developers to retain greater patent and intellectual property rights, while leveraging some Federal investment in the technology.

Eligible Recipients. Public or private organizations, businesses, public or private research organizations, state and local government authorities working together as a

consortium. A JPP consortium consists of one or more transit operators and one or more developers of technology that have a common interest in the deployment of a technological innovation. Any business, organization, person, or governmental body may contribute funds to a joint partnership project.

Cost Sharing/Local Match. Consortium contribution. The Federal Government may provide up to 50% of the cost share required for the deployment. The remaining cost share must be provided in non-Federal resources that may include state, local and/or private sector funds.

Additional Information/Resources. www.fta.dot.gov/11210_11496_ENG_HTML.htm

CFDA Code. 20.512

g. International Mass Transportation Program (IMTP).

Authorizing Legislation. 49 U.S.C Section 5212(e)

Program Objective. To inform the U.S. domestic mass transportation community about technological innovations available in the international marketplace and activities that may afford domestic businesses the opportunity to become globally competitive in the export of mass transportation products and services.

Description. The Secretary is authorized to engage in activities such as:

(a) Development, monitoring, assessment, and dissemination domestically of information about worldwide mass transportation market opportunities;

(b) Cooperation with foreign public sector entities in research, development, demonstration, training, and other forms of technology transfer and exchange of experts and information;

(c) Advocacy in international mass transportation markets of firms, products and services available from the U.S.;

(d) Informing the international market about the technical quality of mass transportation products and services through participation in seminars, expositions, and similar activities; and

(e) Offering those FTA technical services that cannot be readily obtained from the U.S. private sector to foreign public authorities planning or undertaking mass transportation projects if the cost of these services will be recovered under the terms of each project.

Both FTA and DOT Strategic Plans include advancing America's economic growth and competitiveness domestically and internationally as a primary goal. The goal is the product of extensive public outreach, and reflects the input of both public and

private sectors of the U.S. mass transportation industry on the proper role of the Federal Government in this area. The overall structure of the IMTP has been designed with this goal in mind, and is consistent with Congressional intent for the IMTP. The program is divided into four basic functional categories:

(a) Intergovernmental Cooperation Agreements;

(b) Technology/Information Exchange;

(c) Human Capacity Building; and

(d) U.S. Industry Trade Support.

Funding for the IMTP includes revenues paid to the Secretary by any cooperating organization or person and may be used to carry out authorized activities, including necessary promotional materials, travel, reception and representation expenses.

Eligible Recipients. Not restricted.

Cost Sharing/Match. None required unless the recipient derives substantial benefits from the project.

Additional Information/Resources. http://www.usatrade.gov/imtp

CFDA Code. 20.512

h. Transit Cooperative Research Program.

Authorizing Legislation. 49 U.S.C Section 5313(a)(2)

Appropriations. "Transit Planning and Research" Account of the Annual Department of Transportation Appropriations Act

Program Objective. The goal of the Transit Cooperative Research Program (TCRP) is to undertake research and other technical activities in response to the needs of local transit service providers and suppliers on a variety of transit problems involving operations, service configuration, engineering, maintenance, human resources, administration, policy, and planning. The TCRP is an applied research program with the objective of developing near-term solutions to problems facing transit-operating agencies.

Description. The TCRP is a unique undertaking. Anyone with an interest in public transportation may play a role in setting the research agenda for the program by submitting research problem statements to the Transportation Research Board (TRB) at any time. Problem statements are solicited annually on the Internet's World-Wide Web, and by means of a mailing to individuals representing transit agencies,

metropolitan planning organizations, universities, and other interested individuals and organizations. In addition, to complement the open solicitation process, from time to time, research-needs conferences are held or small consultant studies are commissioned to develop research problem statements on topics of special interest.

The TCRP is a transit-industry-directed research program, designed to focus on near-term, problem solving research that is responsive to the ever-changing research needs of transit operating agencies. TCRP began an effort to identify the short-term research needed to address such goals as investing in innovative and sustainable technologies, creating desirable land-use and development patterns, and strengthening regional and metropolitan planning and decision-making. Additionally, TCRP addresses a long-range strategic transit vision. The TCRP focuses on issues significant to the transit industry with emphasis on developing near-term research solutions to a variety of transit problems involving: facilities, service concepts, operations, policy, planning, human resources, maintenance, and administrative practices.

The selection of research projects is the responsibility of the TCRP Oversight and Project Selection (TOPS) Committee. The TOPS Committee consists of industry leaders, representing the primary beneficiaries of TCRP research. It functions as the TCRP governing board and sets research priorities.

Eligible Recipients. Only the National Academy of Sciences (NAS). (Note: The TRB, which manages the TCRP for the NAS, awards contracts for TCRP research and studies to all types of performers including transit agencies, public and private firms, public and private universities, consultants, facilitators, and individuals.)

The primary participants in TCRP are:

(1) An independent governing board organized by the Transit Development Corporation and designated by the TCRP Oversight and Project Selection (TOPS) Committee;

(2) TRB as program manager and secretariat for the TOPS Committee;

(3) The American Public Transportation Association (APTA) as a vital link to the transit community; and

(4) FTA as program sponsor.

Other important participants in TCRP include transit professionals, state and local government officials, equipment and service suppliers, universities (private and public) and consultants. Each of these participants has different interests and responsibilities; however, each is an integral part of the cooperative research effort.

Cost Sharing/Match. None required.

Additional Information/Resources. http://www4.nationalacademies.org/trb/crp.nsf

CFDA Code. 20.514

i. Capital Investment Grants and Loans or the Introduction of New Technology.

Authorizing Legislation. 49 U.S.C Section 5309(a)(1)(D).

Appropriations. "Capital Investment Grants" Account of the Annual Department of Transportation Appropriations Act.

Program Objective. The objective of this program is to introduce new technology into regular transit service through testing of small quantities of pre-production prototypes.

Description. The Secretary of Transportation may make assistance grants and loans under this section to assist state and local governmental authorities in financing the introduction of new technology, through innovative and improved products.

FTA encourages suppliers to produce, and transit providers to introduce, new technology in transit service, in the form of innovative and improved products. Projects should meet the following criteria:

(1) The technology is shown to be "suitable" for transit operations by laboratory testing or limited testing in the transit environment or in a related transportation environment. "Suitable" in this context means a reasonable certainty that the technology will be feasible, safe, and operable and will prove beneficial over a satisfactory useful life.

(2) Use of the new product is expected to result in increased efficiency in terms of time, cost or other equipment attributes, including the following:

(a) Improved safety and security for passengers, employees, and the public;

(b) Increased accessibility for individuals with disabilities;

(c) Better reliability and maintainability; or

(d) Reduced pollutant emissions or environmental intrusion.

Eligible Recipients. Public agencies, including States; municipalities and other subdivisions of States; public agencies and instrumentalities of one or more States; and public corporations, boards, and commissions established under State law. Applicant must have legal, financial, and technical capacity to carry out proposed project and maintain facilities and equipment purchased with Federal assistance.

Private transportation companies may participate through contractual arrangements with a public entity.

Cost Sharing/Local Match. Twenty percent of total project cost required. The accepted value of equipment contributed to the project may be used in lieu of cash.

CFDA Code. 20.500

j. National Transit Institute (NTI).

Authorizing Legislation. 49 U.S.C. Section 5315

Appropriations. "Transit Planning and Research" Account of the Annual Department of Transportation Appropriations Act

Program Objective. To provide both training and training assistance to the transit industry.

Description. NTI was established in 1992 at Rutgers, the State University of New Jersey, to promote, develop, and deliver high quality education and training for persons engaged in Federal-aid transit work in order to improve public transit in the United States. The Institute serves the training and development needs of the transit industry, and plays a significant role in support of FTA's Professional Capacity Building Program, which emphasizes training and retaining a quality workforce in the transit industry.

NTI develops and conducts training for Federal, state, and local transit employees on a variety of industry-defined courses in management and supervision, as well as innovative methods and techniques for improving transit workforce performance. Courses are conducted at sites nationwide on a broad range of subjects. The program provides support for: (1) the NTI Annual Transit Trainers Workshop, which brings together trainers and human resource specialists from the industry to learn the latest training techniques and share training experiences on the job; (2) NTI Transit Academy, which provides new transit professionals with a first-hand look at all elements of transit service from the provider's perspective; (3) NTI Transit Fellows Program -- a competitive program that identifies technical industry experts and supports presentation of their expertise at conferences, seminars, and workshops; and (4) NTI Clearinghouse. Future efforts will continue to focus on identifying new training opportunities and supporting needed managerial, technical and professional development in the transit industry. See the NTI website at [http://www.policy.rutgers/edu/nit].

Eligible Recipients. Rutgers University only. [Note: Rutgers may contract with the following types of organizations: state and local agencies, consultants or individuals, subject to University and/or State regulations.]

Cost Sharing/Local Match. None required. Title 49 U.S.C. Section 5315(d) permits up to one-half of one percent of the Urbanized Area Formula Program (49 U.S.C. Section 5307) and the Capital Investment Program (49 U.S.C. Section 5309) funds to be made available to a state or public transit agency recipient in a fiscal year, to be used for tuition and direct educational expenses for transportation employees for educational and training programs relating to transit, at a Federal share not to exceed 80 percent. Proposed training activities to be supported with Urbanized Area Formula Program funds should be included in the grantee's Urbanized Area Formula Program application.

CFDA Code. None

k. University Transportation Centers Program (UTCP).

Authorizing Legislation. 49 U.S.C. Section 5505

Appropriations. "University Transportation Research" Account of the Annual Department of Transportation Appropriations Act

Program Objective. The UTCP's mission is to advance U.S. technology and expertise in the many disciplines playing a role in transportation through the mechanisms of education; research and technology transfer at university-based centers of excellence. University Centers conduct research aimed at addressing regional and national transportation problems. These centers of excellence address transportation management, research and development matters with special emphasis on increasing the number of highly skilled individuals entering the field of transportation.

Description. FTA's Office of Research, Demonstration and Innovation has the administrative management function for FTA's contribution to the Department's University Transportation Centers Program. This program is administered through the Department's Research and Special Programs Administration (RSPA), to continue support for innovative research, education, and technology transfer activities in the UTCP—the only program in the United States that provides higher education for the next generation of transportation professionals and connects them to career opportunities in the industry. In developing the Transit Research and Technology Business Plan, FTA recognized the UTCP as a valuable and ongoing resource to complement its overall research efforts on behalf of the transit industry. In addition, FTA recognized the role UTCP could play in furthering FTA's professional development initiatives to attract potential students to the transit industry. UTCP institutions can also aid FTA's efforts in the area of transit professional capacity building through the development of transit-related courses and curricula.

Eligible Recipients. RSPA only. [Note: The universities may contract with non-profit organizations, transit agencies, or individuals.]

Cost Sharing/Local Match. None required.

Additional Information/Resources. http://www.utc.dot.gov

CFDA Code. 20.701.

l. Intelligent Transportation Systems (ITS).

Authorizing Legislation. TEA-21, Sections 5001, and 5201 to 5213; TEA-21, Title III, FTA Programs, Section 3012; and TEA-21, Title 5 Sections 5117 and 5118

Appropriations. Highway Trust Fund Account of the Annual Department of Transportation Appropriations Act

Program Objective. To develop, research, test, and deploy transit-related elements of the national Intelligent Transportation System program.

Description. Intelligent Transportation Systems (ITS), as defined in TEA-21, means electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system. The ITS Program is designed to develop, research, test, and deploy the electronics, communications, or information processing systems in accordance with the National ITS Architecture. TEA-21 provides funding for ITS standards, research, operational tests, deployment and professional capacity building.

The purpose of the ITS Program is to expedite deployment and integration of ITS, ensure that transportation officials have adequate knowledge of ITS, improve regional cooperation and operations planning, promote innovative use of private resources, and develop a capable ITS workforce. In accordance with TEA-21 Section 5206(e), all ITS projects are required to conform to the National ITS Architecture and Standards. As of April 8, 2001, the FTA National ITS Architecture Consistency Policy for Transit Projects went into effect and defines FTA's policy regarding the TEA-21 Section 5206(e) requirement. An ITS project is defined to be any project that in whole or in part, funds the acquisition of technologies or systems of technologies that provide or contribute to the provision of one or more ITS user services as defined in the National ITS Architecture. The "National ITS Architecture" means a common framework for ITS interoperability. The National ITS Architecture comprises the logical architecture and physical architecture that satisfy a defined set of user services.

Eligible Recipients. State and local government agencies, public and private transit agencies, universities, non-profit organizations, consultants, legally constituted public agencies, operators of public transportation services, and private for-profit organizations.

Cost Sharing/Local Match. Varies per program from none to 50%.

TEA-21, Section 5206. None
TEA-21, Section 5207. 20%
TEA-21, Section 5208. 50%
TEA-21, Section 3012. 20%

Additional Information/Resources. http://www.its.dot.gov.

Reference. FTA issued the National ITS Architecture Consistency Policy for Transit Projects, which went into effect on April 8, 2001. The Policy can be found in the Federal Register at 66 FR 1455, or on the www.fta.dot.gov website.

CFDA Code. None.

m. Bus Testing Program.

Authorizing Legislation. 49 U.S.C. Section 5318

Appropriations. "Capital Investment Grants" Account of the Annual Department of Transportation Appropriations Act

Program Objective. To promote the production of better transit buses, subsystems, and components, and to ensure that FTA customers purchase safe vehicles able to withstand the rigors of transit service.

Description. The Bus Testing Program is designed to promote the production of better transit vehicles and components and to ensure that FTA customers purchase safe vehicles able to withstand the rigors of transit service. The Bus Testing Program was established in response to legislation included in the Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURAA). This legislation required all new and modified bus models to be tested before being purchased with Federal funds. The Altoona Bus Testing and Research Center was established in 1989. Since 1989, the Pennsylvania Transportation Institute (PTI) has operated and maintained the Altoona Bus Testing Center on behalf of the FTA.

In 1999, FTA entered into a Cooperative Agreement with PTI to support their efforts in the operation and maintenance of the Altoona Bus Testing Center. Under this agreement, PTI manages the testing requirements as defined in the Bus Testing Regulation, 49 C.F.R. Part 665. PTI provides all management, administrative, technical and support staff; facilities, instrumentation, equipment, and materials necessary to test new bus models for maintainability, reliability, safety, performance (including braking performance), structural integrity, fuel economy, emissions, noise, and related technical support in accordance with 49 C.F.R. Part 665 and 49 U.S.C. Section 5318.

FTA oversees and actively participates in the program by conducting program reviews, modifying or creating new test procedures and other testing requirements as

needed; develops the annual operating budget, and maintains frequent contact with PTI project management.

Eligible Recipients. Penn State University only. Beneficiaries are bus manufacturers and transit agencies.

Cost Sharing/Local Match. FTA pays 80% of testing costs. The manufacturer or transit agency pays the remaining 20%.

CFDA Code. 20.507

5. COST SHARING. FTA is required by law to establish a Federal share consistent with any clear and direct financial benefit to any entity participating in a project financed under the authority of 49 U.S.C. Section 5314. Accordingly, FTA encourages cost sharing on projects involving organizations funded under Sections 5312 and 5314, as well as the provision of local matching funds by public bodies to the maximum extent feasible. Cost sharing is intended to serve the mutual interest of the Federal Government and recipient organizations by ensuring maximum utilization of the available funding resources. Cost sharing is not a prerequisite to funding for Sections 5312 and 5314 projects. However, it is considered in the evaluation of application proposals. Usually, the amount of cost sharing for Sections 5312 and 5314 projects is determined by mutual agreement between FTA and the applicant, and may be in the form of in-kind contributions, as well as cash. Factors to be considered in negotiating the amount of cost sharing include the following:

a. Type of Project and Nature of the Recipient.

(1) In the case of grants and cooperative agreements with State or local agencies, some cost sharing and matching of the total project cost is encouraged for Sections 5312 and 5314 projects. FTA has generally determined (80/20 percent) of the total project cost as the expected Federal/local share ratio. This may be adjusted during the application review process, if the resources of the applicant and the anticipated project benefits, when considered jointly, justify a different Federal/local share. The percentage of cost sharing and matching is generally based on two key factors: (1) The relative interest of the Federal Government, and (2) the risk to the applicant for the outcome of the project.

(2) In the case of Sections 5309(a)(1)(D), 5312(d) and 5314 grants or cooperative agreements with commercial or industrial organizations, greater private contribution to cost sharing would be expected if the project were likely to enhance that organization's capability, expertise, or competitive position to its financial advantage. Organizations predominantly engaged in research and development with little or no production capability may not be in a position to derive a monetary benefit from such participation. Thus, cost participation by commercial or industrial organizations could reasonably range from no cost to participants to as much as 50 percent or more of the project costs.

(3) In the case of grants or cooperative agreements with educational institutions and other nonprofit organizations, a higher percentage local share is expected when

the direct cost of the project consists primarily of the academic year salaries of faculty members.

A relatively low degree of cost sharing may be appropriate if it is determined that an area of research or initiative that requires special stimulus is in the national interest, or that the product desired is largely or exclusively for the benefit of the Federal Government, as opposed to the funding recipient.

b. Third Party Contractor/Joint Venture Participation. Third party contractors and other for-profit entities participating as performers or contractors in a project venture also may affect the amount of local share to be provided. When negotiating on cost sharing or local matching funds, no cost or contributions counted toward other federally funded cost sharing project requirements may be considered for the proposed FTA funded assistance effort. Neither costs nor the values of third party in-kind contributions may count toward satisfying a cost sharing or matching requirement of an agreement, if they have been or will be counted towards satisfying a cost sharing or matching requirement of another Federal agreement, a Federal procurement contract, or any other award of Federal funds.

c. Program income. During the application review process, the applicant may request authorization from FTA to use any potential program income to meet the cost-sharing or matching requirement of the agreement. In such cases, the amount of the Federal share proposed for the grant or cooperative agreement would not be reduced until the time of project completion, when the FTA and local share would be reduced on a pro-rated basis and verified by an audit.

Examples of potential income-producing ventures for projects include: registration fees collected for attendance at project-sponsored conferences, training workshops, seminars and symposiums; fees collected from projects, e.g., revolving loan fund and bonding assistance type projects, advertising fees or fare revenues from transit passengers.

d. Non-Federal Share. The recipient pays for all of the cost of each project. The recipient is reimbursed in part by the Government. The portion not reimbursed by the Government is referred to as the non-Federal cost share. The Government expects to share in the costs of all tasks of a project. The Government evaluates the quality of cost share in the following terms:

(1) High Quality Cost Share. These are financial resources that will be expended by the recipients on the proposed project's Statement of Work (SOW) and will be subject to the direction of the project management team. This basically means the funds the non-Federal participants will spend for labor hours, materials, new equipment (prorated if appropriate), and subcontractor efforts expended on the project's SOW, and restocking the parts and material consumed. High quality cost share can include new Independent Research and Development funded by the recipient, but only if those funds are offered by the proposer to be spent on the SOW and subject to the direction of the project management team.

(2) Low Quality Cost Share: These are non-financial resources that will be expended on the proposed project's SOW and will be subject to the direction of the project management team. This is typically wear-and-tear on in-place capital assets, such as machinery or the prorated value of space used for the project.

(3) Unacceptable Cost Share: This is a resource that either (a) will not be expended on the project's SOW, or (2) will not be subject to the direction of the management team as discussed above. Unacceptable cost share will be subtracted from the proposer's claimed total cost for the project, and the required cost share will be recalculated. Unacceptable cost share examples include:

(a) Sunk costs, *i.e.*, costs incurred before the start of the proposed project;

(b) Foregone fees or profits;

(c) Foregone General and Administrative or cost of money applied to a base of Independent Research and Development;

(d) Bid and proposal costs;

(e) Value claimed for intellectual property or prior research, unless the value is diminished by the project; and

(f) Parallel research or investment, *i.e.*, research or other investments that might be related to the proposed project but which will not be part of the SOW or subject to the direction of the project management team. Typically these research or investment activities will be undertaken regardless of whether or not the proposed project proceeds. They include off-budget resources, *i.e.*, resources that will not be used by the proposer in implementing the SOW, and will not be considered when FTA evaluates cost share.

6. PROGRAM AREAS. FTA has organized the Research and Technology Program into the following six program areas:

a. Safety and Security;

b. Equipment and Infrastructure;

c. Fleet Operations;

d. Specialized Customer Services;

e. Policy and Planning; and

f. Professional Capacity Building.

These program areas have been selected because they address both the identified needs of the transit industry and broader goals of the U. S. Department of Transportation. To ensure system integration, results from one program area become input for another with an objective of maximizing achievement of the desired outcomes. Collectively, the programs and projects will improve customer service, increase the cost-effectiveness of transit assets, and contribute to environmental quality while building the professional capacity of the industry.

7. TYPES OF PROJECTS FINANCED. FTA primarily finances projects that address current transit industry problems, and have near-term or medium-term impact. Examples of projects funded under the Research and Technology Program are found in a compendium entitled "Transit Research and Technology Programs—Directory of Project Awards," which is published annually by the FTA Office of Research, Demonstration and Innovation. Types of functional projects include: research, development, operational test, demonstration, evaluation, architecture and standards, deployment, new technology introduction, mainstreaming, planning techniques, studies or analysis of policies, and data collection and improvement of technological aspects of public transportation.

8. TYPES OF PROJECT CONTRACTUAL RELATIONSHIPS AND APPLICANT ELIGIBILITY. There are **seven** types of relationships between FTA and organizations receiving funds directly from FTA:

a. Cooperative agreements;

b. Grants;

c. General working agreements;

d. Inter-agency agreements;

e. Intra-agency agreements;

f. Other agreements (other transactions); and

g. Contracts.

FTA will use grants or cooperative agreements when the principal purpose of the activity is to stimulate or support research, development, demonstration or other innovation in transit. Refer to the glossary for distinction between the seven types of contracts.

Unless otherwise specified by law, FTA considers the following types of applicants to be eligible for technical assistance grants or cooperative agreements: state and local governments, or agencies thereof; universities, and for-profit and nonprofit organizations. Eligibility to enter into a grant or cooperative agreement relationship must be established prior to project award. Absent unusual circumstances, FTA does not, as a matter of policy, award a grant or cooperative agreement to private entrepreneurs or commercial concerns

for the development of proprietary products. However, entrepreneurs that provide mass transportation services may receive Federal assistance for start-up costs.

9. ALLOWABLE COSTS. To be allowable, costs must conform to the requirements of OMB Circulars A-21, A-87, A-110, and/or A-122, as applicable, and must also meet the following criteria:

a. Be necessary and reasonable for proper and efficient administration of the recipient's program;

b. Be authorized or not prohibited under state or local laws or regulations;

c. Be consistent with policies, regulations, and procedures that apply uniformly to both federally assisted and other activities of the recipient;

d. Be accorded consistent treatment through application of generally accepted accounting principles appropriate to the circumstances;

e. Not be allocable to or included as a cost in any other federally financed program in either the current or a prior period;

f. Be clear of all applicable credits; and

g. Be in accordance with the terms of the project agreement and the latest approved project budget.

The Federal Government reserves the right to terminate any grant or cooperative agreement project at any time if the Federal Government determines that the purposes of the statute authorizing the Project would not be adequately served by the continuation of Federal financial assistance for the Project, or if the Grantee or Recipient is in violation of the terms of the Agreement. Following a termination, no further costs incurred by the recipient or contractor will be reimbursed, except those involved in the orderly cessation of activities.

10. CRITERIA FOR PROJECT SELECTION.

FTA acknowledges receipt of applications. FTA then reviews and responds to every application received in writing as promptly as possible. However, budgetary and program constraints make it necessary to select for further consideration only those applications most relevant to the needs of the transit industry, and those in accordance with FTA's Strategic and Five-Year Plan. Criteria for project selection include:

a. Compatibility with FTA goals, activities, and Strategic and Research and Technology Business Plan,

b. Availability of funding,

c. Compatibility with Section 5314 and other program purposes and objectives,

d. Importance of the proposal to the FTA fiscal year program agenda in terms of achieving the agency's goals and special program initiatives,

e. Potential for impact on the state-of-the-art from the viewpoint of improvement and innovation,

f. Level of requested funding, cost sharing, or local matching funds proposed by the project budget,

g. Technical feasibility and potential for successful introduction into use in the transit industry,

h. The innovative or creative nature of the project,

i. Credentials, background, experience, and demonstrated capabilities of applicant,

j. Evidence of local commitment/support to the project,

k. Level of participation in the project and/or resources contributed by the private sector to help implement the project's objectives/participation,

l. Extent to which the proposed effort will duplicate services being offered by other agencies in the targeted areas,

m. Geographic distribution of existing projects and proposed projects, and

n. Other pertinent factors.